

**Increasing Consumer Understanding & Acceptance of Second Generation  
Biotechnology Products**

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**Final report** (covers period of 7/1/2002- 6/30/2005)

**Executive Summary**

The primary objectives of this research project were (1) to better understand consumer behavior towards second generation (nutritionally-enhanced) biotechnology products is formed among different consumer segments, and (2) to derive better marketing and communication strategies for these products.

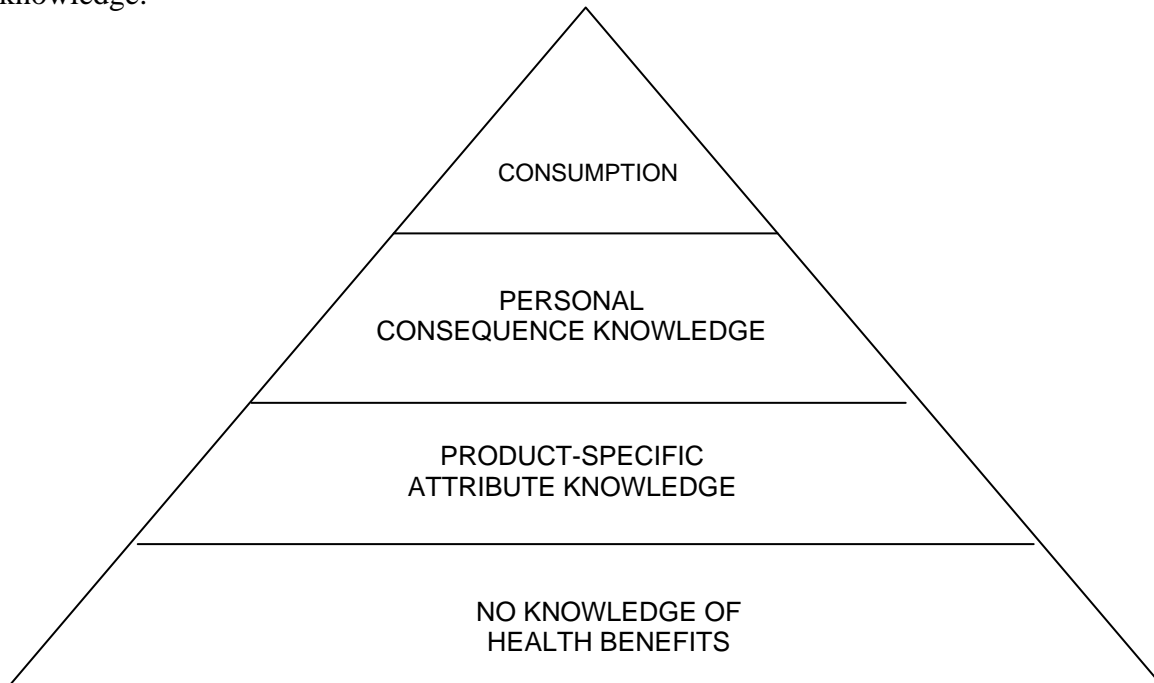
This research represents a package of studies that have been conducted, published, and disseminated in various forms over the period of the grant and through 2006. The relevant publications are listed below, but many of the basic ideas were published in the 2005 book: *Marketing Nutrition: Soy, Biotechnology, Functional Foods, and Obesity*, (University of Illinois Press). This book has been widely distributed to university and public libraries, and to researchers in nutrition and allied sciences. It represents an accessible entry point for industry audiences to the scientific literature around consumer behavior as it relates to functional foods, biotechnologically-enhanced foods, and how consumers conceive of food-borne risks.

Among the important implications of this work is that one should avoid the term “The Consumer” in our marketing and policy work, especially in statements from agricultural producers and life science companies, who are furthest from consumer markets in the agri-food supply chains. There are many relevant categories (segments) of consumers whose behaviors are different, one from another, with respect to risk perception, attitudes towards nutritional attributes and functionality of foods, and how they conceive cooking and eating.

We have identified that behaviors towards health and nutrition are different between two important segments: Health-Motivated and Taste-Motivated consumers. Qualitative and quantitative analyses of attitudes and consumption behaviors of these two groups were completed for soy foods, including those with functional benefits. Health-motivated consumers may seem the logical target market, but this strategy limits the impact of increasing nutritive content of foodstuffs, as this group is not as innovative and it doesn't have as powerful a “gatekeeper” effect on other consumers as the Taste-Motivated

segment. More importantly, these two segments are effectively reached by different marketing messages and different product development strategies.

Another significant finding is that consumers behave differently depending upon the type (quality) of nutritional information they have. The graphic below shows the hierarchy of knowledge.



Thirty-nine percent of surveyed consumers had no knowledge of functional benefits of soy and only seven percent had both attribute knowledge and the consequences of the attributes for their health (e.g. relief from menopause symptoms, anti-cancer benefits). Linking to the consequences is a vital component of marketing communication of functional foods; it is not enough to describe the attribute, one must link clearly to personal benefits in ways laymen can understand.

Both proponents and opponents of biotechnology applications in the food system make fallacious assumptions about consumers' perceptions of, and attitudes toward, risks and information about those risks. Moreover, the research completed under this project implies that successful messages to promote biotechnologically-enhanced foods must be tailored to consumer segments, as opposed to a "one-size-fits-all" marketing campaign.

### **Publications**

Wansink, Brian, Randall E. Westgren, and Matthew M. Cheney (2005), "Hierarchy of Nutritional Knowledge that Relates to the Consumption of a Functional Food, Nutrition, 21:2 (February), 264-8.

Wansink, Brian (2005), Marketing Nutrition – Soy, Functional Foods, Biotechnology, and Obesity, Champaign, IL: University of Illinois Press.

Wansink, Brian and Randall Westgren (2003), “Profiling Taste-Motivated Segments,” Appetite, 41:3 (December), 323-327.

Wansink, Brian and Junyong Kim (2001), “The Marketing and Consumer Acceptance of Biotechnology,” Journal of Commercial Biotechnology, (Winter) 7:3, 249-259

Wansink, Brian (2001), “Selling Biotechnology?” Farmweek, (May 7), 15.

Wansink, Brian and Junyong Kim (2001), “The Marketing Battle Over Genetically Modified Foods: False Assumptions about Consumer Behavior,” American Behavioral Scientist, 44:8 (April), 1405-1417.

### **Presentations, Outreach, and Acknowledgements**

In addition to presentations at trade association meetings in Indore (India), Taipei (Taiwan), and Beijing (China), academic presentations have been made on these topics to the Association for Consumer Research, Experimental Biology, and Pangborne Sensory Science, the American Agricultural Economics Association, and Cooperative Program in Agricultural Marketing and Business Annual Research Conference (Calgary, Canada).

The core material from this research has been incorporated into three educational programs. First is the Food and Brand Lab of Cornell University, directed by Wansink. The materials are used in undergraduate and graduate education for students of marketing, agribusiness management, and consumer behavior. The second program is the Food and Agribusiness Management Program of the University of Illinois, directed by Westgren. The materials have been incorporated into courses in agri-food strategy and an all-campus general education course entitled “Humanity in the Food Web”. The third program is the Food Industry Executive Education Program, taught by Westgren. In this series of modules, the materials are used to highlight the importance of producing and marketing product attributes on the farm and in primary processing that have consumer benefits.

The research has been reported in the Journal of Agribusiness (Spring 2006) most recently and is noted generally on 19,000 web pages, including 176 that specifically mention funding by “IMBA” and 120 others that instead refer the “Illinois-Missouri Biotechnology Alliance.” We are very grateful for IMBA’s support of this work and of the reception and impact it is beginning to have as a result of the investment.